

Immediate Effect of Ankle Prophylactic Support to Improve Dynamic Balance among Taekwondo Players: A Pilot Study

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ABSTRACT

Introduction: Taekwondo is a high-intensity Olympic combat sport and is reported to be among the top five sports with the highest injury prevalence. Repetitive kicking, rapid directional changes, and frequent single-leg stance make athletes vulnerable to lower limb injuries, especially involving the ankle joint. Recurrent ankle injuries may lead to chronic ankle instability, negatively affecting balance and performance. Preventive strategies such as ankle prophylactic supports are commonly used, including athletic taping, Kinesio-taping, and ankle binders applied prior to high-intensity activity.

Aim: To evaluate the immediate effectiveness of different ankle prophylactic supports as a preventive measure to improve dynamic balance among taekwondo athletes using a clinical trial design.

Materials and Methods: Twelve young taekwondo athletes (seven males and five females) were recruited based on age, playing experience, and the Athletic Identification Scale. Participants were equally allocated to three intervention conditions: athletic taping, Kinesio-taping, and ankle binder. Dynamic balance was assessed

using the SEBT as a pre-test, followed by application of the respective ankle support and an immediate post-test. Data were analysed using SPSS version 20.0, and non-parametric tests were applied due to distribution characteristics.

Results: The mean age of participants was 14.00 ± 0.74 years, indicating a homogeneous sample. Mean height and weight were 155.17 ± 8.59 cm and 48.25 ± 8.68 kg, respectively. Age and height showed near-normal distribution, whereas body weight demonstrated positive skewness with high kurtosis. The mean CPRELT and CPPPERT values were 92.65 ± 8.34 and 88.52 ± 12.62 , respectively. Kruskal-Wallis analysis revealed higher mean ranks for athletic taping on the right and left limbs (10.5 each) compared to Kinesio-taping (3.25 right, 4.25 left) and ankle binder (5.75 right, 4.75 left).

Conclusion: Athletic taping demonstrated significant immediate improvement in dynamic balance compared to Kinesio-taping and ankle binders in the taekwondo athlete population studied.

Keywords: ankle injuries, athletes, elastic tape.

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